

Investigating the Antecedents of Teacher Burnout and its Impact on Turnover Intentions in a Post-disaster Context

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Abstract

This study sought to investigate employee burnout within a post-disaster context by exploring teachers' burnout perceptions and workplace attitudes in the aftermath of the 2010-2011 Christchurch earthquakes. The study hypothesised that burnout dimensions (emotional exhaustion and cynicism) would be related with the extent to which individuals and schools were impacted by the earthquakes, and with the quality of school support for staff and students (i.e., personal disaster impact, school disaster impact and school responsiveness to the disaster), with perceptions of role conflict and role overload, and with turnover intentions. Additionally, a Teacher Burnout Model was proposed whereby emotional exhaustion and cynicism were hypothesised to mediate the relationships between the independent variables (i.e., the disaster-related and role-related variables) and turnover intentions. 125 primary, intermediate and secondary school teachers from the city of Christchurch completed an online survey. Results revealed that high role overload, high role conflict, high school disaster impact, and schools' ineffective disaster coping responses, were associated with increased levels of emotional exhaustion and cynicism. Although greater impact of earthquakes on teachers' personal lives was related to higher levels of emotional exhaustion, results revealed a non-significant relationship between personal disaster impact and cynicism. In the Teacher Burnout Model, the relationships between both role stress variables and turnover intentions were mediated by perceptions of emotional exhaustion. This study contributes novel findings to the burnout literature, and provides implications for schools and organisations operating within a disaster context.

On September 4th 2010, a magnitude 7.1 earthquake struck the city of Christchurch in New Zealand. While there was extensive property and infrastructure damage, remarkably there were few injuries and no fatalities. The following year, on February 22nd, Christchurch was hit by another earthquake (magnitude 6.3), killing 185 people, injuring hundreds, and causing widespread damage to buildings and city infrastructure. Christchurch residents continue to experience earthquakes, with over eleven thousand quakes recorded since the original major earthquake in September 2010.

The unpredictable, uncontrollable and often violent nature of earthquakes can have serious implications for psychological health, including increased post-traumatic stress disorder (Bödvarsdóttir, & Elklit, 2004; Fan, Zhang, Yang, Mo, & Liu, 2011; Kwon, Maruyama, & Morimoto, 2001; Zhang, Shi, Wang, & Liu, 2011), and depression and anxiety disorders (Fan et al., 2011; Zhang et al., 2011). Recent research has found that Christchurch residents have experienced psychological distress, including self-reported cognitive dysfunction, sleeplessness, heightened stress (Kemp, Helton, Richardson, Blampied, & Grimshaw, 2011), depression and anxiety (Dorahy & Kannis-Dymand, 2011; Kemp et al., 2011) after the earthquakes in September 2010.

While Christchurch residents' psychological health has been given considerable attention after the earthquakes, there has been limited research into how the earthquakes have affected individuals at work. In fact, acute extra-organisational stressors, such as disasters, have been studied extensively on individual mental health outcomes, yet there has been limited focus on organisational behaviour outcomes (Byron & Peterson, 2002; Qin & Jiang, 2011). However, stress from non-work factors can pervade into the work domain, and thus deserves further attention. For example, a recent meta-analysis revealed significant relationships between family-related variables, especially that of family stress and conflict, and job satisfaction (Ford, Heinen, & Langkamer, 2007).

The scarce amount of quantitative studies available have suggested that disasters can have a negative impact on employee and organisational outcomes, such as increased job tension (Hochwarter, Laird, & Brouer, 2007), increased employee absenteeism (Byron & Peterson, 2002), and decreased job satisfaction (Qin & Jiang, 2011). However, some studies have found no relationship between disaster exposure and job satisfaction (Byron & Peterson, 2002), and others have even identified positive organisational outcomes after disaster exposure, such as increases in employee performance and decreases in absenteeism (Qin & Jiang, 2011). Moreover, a qualitative study suggests that despite great job stress after the Wenchuan earthquake in 2010, employees were more dedicated to their work and developed a strong sense of shared mission (Wang, Shi, Ng, Wang & Chan, 2011). Within the Christchurch context, a recent qualitative study found that employees were engaged with their work in the initial earthquake aftermath, but over time become increasingly disengaged (Nilakant & Walker, 2012). The studies conducted thus far suggest that disasters may elicit both positive and negative outcomes, and that more research is needed to fully understand the impact of disasters on professional settings, and what variables influence these outcomes.

One particular outcome that is yet to be adequately studied within a post-disaster context is employee burnout. Employee burnout is a work-related stress syndrome characterised by feelings of emotional exhaustion, cynical attitudes towards work and feelings of reduced personal accomplishment (Maslach, Schaufeli, & Leiter, 2001). Burnout is a growing problem in today's competitive and fast-paced work environment, with severe consequences for both employees and employers (Hudson, 2005). Organisational costs include increases in turnover and absenteeism, and a reduction in employee performance (Hudson, 2005; Maslach et al., 2001). Research predominately focuses on exploring correlates of burnout, especially work context factors (Halbesleben & Buckley, 2004). Within a disaster environment, the work context may change and certain job demands or resources

may diminish or intensify. Indeed, recent qualitative research conducted in Christchurch suggests that employees have had to deal with additional and amplified existing work and home stressors (Nilakant & Walker, 2012). Therefore, employees may be particularly vulnerable to burnout within a disaster-context, and thus, the exploration of this variable deserves further empirical attention in relation to post-disaster contexts.

Teaching is renowned as being a highly stressful profession (Travers & Cooper, 1993; Schwab, Jackson, & Schuler, 1986), and multiple studies have shown that emotional exhaustion is highly prevalent in teachers compared to other occupations (Schaufeli & Enzmann, 1998; Innstrand, Langballe, Falkum, & Aasland, 2011), even under a stable external environment. After the major earthquakes, Christchurch teachers have had considerable changes to deal with, including fluctuations in student enrolment, deteriorating student behaviours, damaged buildings, site sharing with other schools (Ministry of Education, 2012a), school closures and school mergers (Ministry of Education, 2012b). Therefore, this study will provide valuable insight for a sector that is particularly vulnerable to the burnout syndrome.

Due to the scarcity of burnout research anchored in a post-disaster context, the current study investigates teachers in the Christchurch area with the aim of exploring antecedents and outcomes of teacher burnout. In particular, the study sought to investigate, a) whether the impact of earthquakes on teachers' personal and professional lives, and the quality of the school's response to the disaster, affected burnout, b) the impact of role stressors, namely role conflict and role overload, on teacher burnout, c) the relationship between burnout and turnover intentions, and d) whether burnout mediated the relationship between role-related and disaster-related antecedents and turnover intention.

Burnout

Burnout was first described empirically by Freudenberger (1974) and Maslach (1976) to describe the gradual depletion of energy and motivation felt among counsellors and therapists. Firmly rooted in the human service profession, burnout was thought to be a result of the demanding interpersonal context in the provider–recipient relationship (Maslach, Leiter & Schaufeli, 2008). Since the mid-1970s, research has expanded rapidly, and the phenomenon of burnout has been studied worldwide and across multiple professions (see Schaufeli, Leiter & Maslach, 2008). With this increased attention, many different definitions and measures of burnout have developed (Maslach et al., 2008). Among them, the burnout concept as defined by Maslach has emerged as the most prominent in the literature, in which burnout is described as a job-related outcome that develops in response to chronic stressors (Maslach et al., 2001). According to Maslach et al., (2001), burnout has three underlying dimensions: emotional exhaustion, cynicism and reduced personal accomplishment. Emotional exhaustion refers to an employee's lack of energy and depletion of emotional resources. Cynicism (also described as depersonalisation or disengagement) refers to an employees' psychological detachment from their work. For teachers, this psychological detachment can also be exhibited through indifferent or negative attitudes towards students (Maslach Jackson & Schwab., 1996). Finally, reduced personal accomplishment (also described as reduced personal efficacy) refers to employees' feelings of incompetence. This three-dimensional concept can be measured using the validated *Maslach Burnout Inventory* (MBI; Maslach & Jackson, 1981). Several versions of the MBI have been developed, including a general survey for all occupations (MBI-GS; Schaufeli, Leiter, Maslach & Jackson, 1996), and specific surveys for human service professionals (MBI-HSS; Maslach & Jackson, 1996), and educators (MBI-ES; Maslach et al., 1996).

The MBI three-factor structure of burnout is not without criticism. Several authors argue that the core component of burnout is essentially fatigue, and propose an exhaustion-only construct (Kristensen, Borritz, Villadsen, & Christensen, 2005; Pines & Aronson, 1988). Other scholars have found that reduced personal accomplishment is weakly related to the other burnout dimensions, and in comparison to emotional exhaustion and cynicism, has weak relationships with job attitudes, such as turnover intentions and organisational commitment (Alarcon, 2011; Lee & Ashforth, 1996). Furthermore, researchers have argued that reduced personal accomplishment develops independently of emotional exhaustion and cynicism (Lee & Ashforth, 1996; Shirom, 2005). On the basis of these findings, in this study burnout is defined and measured as emotional exhaustion and cynicism only.

Many different job stress models have been used to explain burnout, including the Job Demand-Control model (Karasek, 1979), Conservation of Resources theory (Hobfoll, 1989), and the Job-Demands and Resources Model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The JD-R model postulates that burnout is likely to emerge when job demands are high, and job resources are low. Job demands can be defined as any aspects of a job that requires sustained physical or psychological exertion (Demerouti et al., 2001). For example, job demands may include workload, time pressure or work-home conflict. Job resources are aspects of the job that are health protecting, in that they either decrease job demands, stimulate development, or are instrumental in achieving work goals (Demerouti et al., 2001). For example, job resources may include feedback, rewards, or supervisor support. The JD-R model postulates that job demands and job resources influence employees' energy levels and motivation levels respectively (Demerouti et al., 2001). Accordingly, job demands deplete an employee's mental and physical resources, leading to exhaustion. Indeed, job demands have been found to associate with the emotional exhaustion component of burnout (Lee & Ashforth, 1996; Alarcon, 2011; Demerouti et al., 2001; Maslach et al., 2001).

Contrastingly, job resources have motivational potential; however, a perceived lack of job resources can result in withdrawal behaviour, such as developing cynical attitudes towards work (Bakker & Demerouti, 2007; Demerouti et al., 2001; Bakker, van Emmerik & van Reit, 2008).

Although reviewing mostly cross-sectional studies, Maslach et al., (2001) claims that research has generally found emotional exhaustion precipitating cynicism. Longitudinal research has established this sequential link from emotional exhaustion to cynicism; however, has also found that cynicism can trigger emotional exhaustion over time, although this sequential link is somewhat weaker (Taris, Le Blanc, Schaufeli & Schreurs, 2005). According to Maslach et al., (2008) this provides evidence for two interpretations; firstly, that emotional exhaustion reduces an employee's capacity to sustain intense involvement in work, and secondly, that cynicism is a dysfunctional coping response that can lead to exhaustion. Nonetheless, cynicism and emotional exhaustion are important concepts within the burnout construct, and require further exploration in regards to uncertain, uncontrollable external environments.

Present Study

While the work context has received considerable attention as a cause of burnout (Halbesleben & Buckley, 2004), the literature has not explored burnout in relation to extreme, unstable work and life contexts. To address this gap in the literature, this study will anchor burnout within a post-disaster framework, by investigating teachers' perceptions of role stressors, school disaster coping, and work-related attitudes after the Christchurch earthquakes. As depicted in Figure 1, the current study will take the burnout dimensions of emotional exhaustion and cynicism as central variables, and explore their relationships with disaster-related antecedents and role-related antecedents, and the outcome of turnover

intentions. Furthermore, the current study will investigate whether the burnout dimensions of emotional exhaustion and cynicism play mediating roles in the antecedent-outcome relationship. While not depicted in Figure 1, this model also takes into consideration important personal characteristics, namely age, gender and teaching-level. The following sections describe each component of the Teacher Burnout Model, discussing relevant literature and proposing hypotheses.

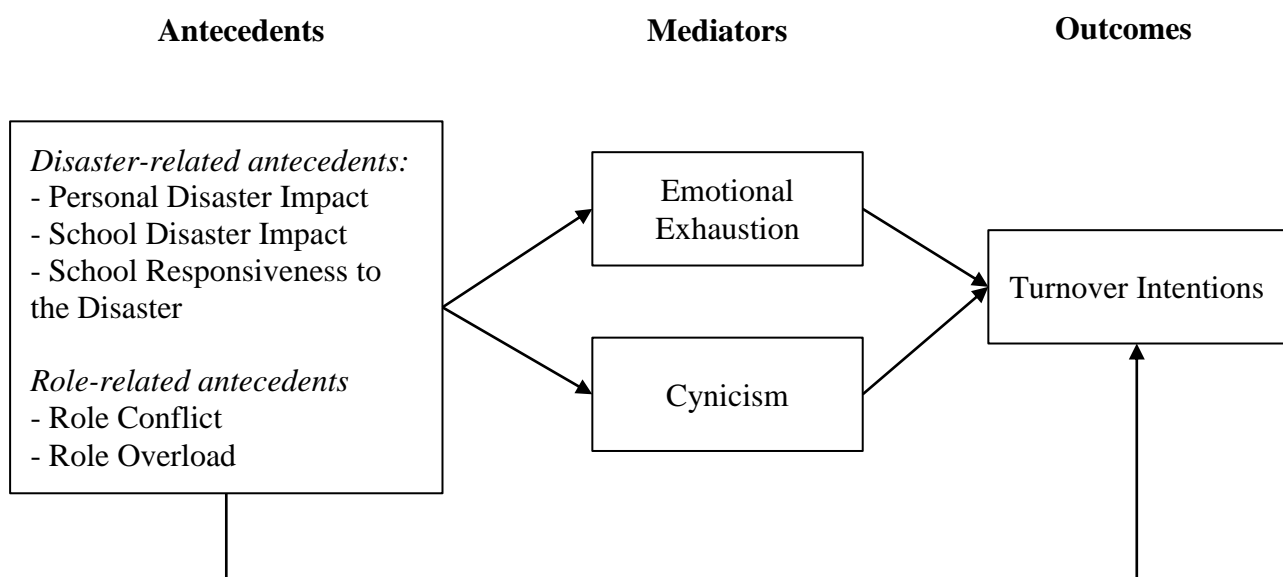


Figure 1. Overview of the Teacher Burnout Model within a Disaster Context

Personal characteristics.

In their review of the literature, Maslach et al., (2001) discuss the importance of individual factors in the presentation of burnout. They argue that individual characteristics have much smaller correlations with burnout in comparison to work-related, situational factors (Maslach et al., 2001). While not a central focus in this study, personal characteristics will be included as control variables in the Teacher Burnout Model. Specifically, the demographic variables of *age* and *gender*, and the work-related variable of *teaching-level*, were chosen as covariates due to their correlations with burnout in the literature.

Age has consistently found to be related to burnout (Maslach et al., 2001). A recent meta-analysis reveals a modest negative relationship between age and emotional exhaustion, indicating that younger employees experience more emotional exhaustion than older employees (Brewer & Shapard, 2004). Additionally, in the teaching profession studies have shown that younger teachers are more at risk from developing emotional exhaustion and feelings of depersonalisation than older teachers (Schwab & Iwanicki, 1982b). This age effect may represent a survival bias, whereby burnt out employees leave their careers earlier, or alternatively, that over time older employees develop coping strategies to combat burnout (Brewer & Shapard, 2004).

According to Maslach et al., (2001) the literature on gender and burnout is largely mixed and inconsistent, and concludes that gender is a weak predictor of burnout. However, recent meta-analyses have revealed complex relationships in the different dimensions of burnout and gender (Purvanova & Muros, 2010; Innstrand et al., 2011). Purvanova and Muros (2010) found small effect sizes for gender and burnout, with women experiencing higher levels of emotional exhaustion than men ($d=.10$), and men exhibiting higher levels of cynicism ($d=-.19$). Although another meta-analysis found similar findings with women experiencing greater emotional exhaustion, an interesting pattern emerged for disengagement (Innstrand et al., 2011). Specifically, the relationship between gender and disengagement depended upon occupation; and in particular, female teachers were less likely to be disengaged than male teachers. According to Purvanova and Muros (2010) the sex differences in the experience of burnout can be explained through Gender Role Theory (Eagly, 1987; Eagly & Wood, 1982). Females are socialised to display their emotions, and are thus likely to express feelings of fatigue (i.e., emotional exhaustion), while males are socialised to conceal their emotions, and thus, are more likely to respond to stress through psychological detachment (i.e. cynicism) (Purvanova & Muros, 2010).

The work-related variable *teaching-level*, operationalised as primary, intermediate and secondary school-level, is also included in the Teacher Burnout Model as a covariate. In the US, middle school and high school teachers have been found to have a more cynical attitude towards their students compared to elementary school teachers (Schwab & Iwanicki, 1982b). However, according to Byrne (1994), teachers experience similar levels of emotional exhaustion and cynicism across different teaching levels, yet the patterns of stressors that influence burnout dimensions differ. For example, for elementary and intermediate school teachers, role conflict was strongly related to emotional exhaustion, whereas for secondary school teachers role conflict was related to depersonalisation (Byrne, 1994). To recruit a larger and more comprehensive sample of disaster-affected schools in this study, primary, intermediate and secondary schools were approached to participate. As the differences in primary, intermediate and secondary-level teachers is not a central focus for this study, teaching-level was entered as a covariate in the Teacher Burnout Model.

Antecedents of burnout.

The following sections describe the disaster-related variables and role-related variables proposed as antecedents of teacher burnout. It highlights why these antecedents are of importance, summarises relevant literature, and proposes hypotheses regarding their relationship on each burnout dimension; emotional exhaustion and cynicism.

Disaster-related antecedents.

It is evident from research that disasters are stressors; simply, they often evoke emotional, cognitive, physical and interpersonal stress reactions (Schmuckler, 2004), and can be especially traumatic due to their extremely negative, sudden, and uncontrollable nature (Carlson & Dalenberg, 2000). Life threatening events, such as disasters, evoke an alarm stress reaction to prepare the body to ‘fight or flight’, and thus, are adaptive for survival

(Selye, 1956). However, excessive and enduring stress responses can take a toll on the body, and evoke exhaustion (Selye, 1956). Chronic stress has been well documented in disaster survivors, and research consistently shows an elevated prevalence of psychological distress such as post-traumatic stress disorder, depression and anxiety in disaster victims (Böddvarsdóttir & Elklit, 2004; Fan et al., 2011; Kwon et al., 2001; Zhang et al., 2011; Kemp et al., 2011; Dorahy & Kannis-Dymand, 2011). Conceptually, burnout is considered a chronic stress outcome, and like disaster exposure, burnout has been found to correlate with post-traumatic stress disorder (Mitani, Fujita, Nakata, & Shirakawa, 2006), depression and anxiety (Maslach et al., 2001). Therefore, burnout and disaster exposure could be integrated into a common framework, providing valuable insight into individual attitudes and well-being at work in the aftermath of a disaster.

Disaster research has largely focused on the association between disaster exposure (i.e., the severity of disaster trauma) and negative consequences (e.g., health outcomes); however, new research has begun to recognise the possibility of psychological resilience and positive reactions in response to disasters (Paton, Smith, & Violanti, 2000). A concept that has recently emerged is post-traumatic growth, which describes the positive psychological changes experienced after a traumatic event (Tedeschi & Calhoun, 1996). Indeed, one qualitative study found that while there were increased sources of job stress following the Chinese earthquake, employees were highly engaged in their work, found meaning in their work, and developed a strong sense of shared mission (Wang et al., 2011). This suggests that burnout may not be the inevitable upshot of a post-disaster context; however, it is clear that more empirical evidence is needed to explore this fully.

Thus far, the precursors to burnout have not been investigated in a post-disaster scenario. To address this gap in the literature, this study proposes that three disaster-related variables may influence burnout, including the extent to which individuals' personal lives

were affected by the disaster (*personal disaster impact*), the extent to which the workplace – in this case schools – was affected by the disaster (*school disaster impact*), and the extent to which schools were able to cope in the aftermath of the disaster (*school responsiveness to the disaster*).

Personal disaster impact.

The Christchurch earthquakes have had a profound effect on many people's lives, with many residents still dealing with earthquake-related hassles two years after the first earthquake in 2010. In particular, housing issues and dealing with government and insurance pay-outs have emerged as common stressors in the aftermath of the earthquakes. This study posits that *personal disaster impact*, defined as the negative impact that the earthquake has had on personal life outside of work, will be an important antecedent in the presentation of burnout in the months following the major earthquakes.

The scarce amount of research investigating personal disaster impact and organisational outcomes has been mixed and inconsistent. Byron and Peterson (2002) found that the severity of exposure to September 11 terrorist attack was related to traumatic stress and absenteeism at work. However, they conclude that employees are able to distinguish that the source of stress is extra-organisational, and thus their job satisfaction was not affected. In contrast Qin and Jiang (2011) found that absenteeism was lower after the Chinese earthquake, yet employees' levels of job satisfaction decreased. These contrasting results reveal the need for more research, and that work outcomes beyond job satisfaction and absenteeism need to be explored.

Burnout is an important chronic stress outcome to be explored after disasters, but it is yet to be fully explored in response to personal difficulties resulting from disasters. To date, employee burnout has only been linked to one quantitative disaster-related study. This preliminary study found that while post-traumatic stress disorder, depression and anxiety had

high prevalence two years after the 2005 Pakistan earthquake, levels of burnout were surprisingly low (Ehring, Razik, & Emmelkamp, 2011). They further argued that trauma exposure severity was not significantly associated with burnout (Ehring et al., 2011). While this result may contradict the proposition that *personal disaster impact* will be an antecedent of burnout, there are a number of issues that limit the generalisation of findings to the present study. Firstly, unlike the present study, Ehring and colleagues investigated trauma exposure rather than the impact the disaster had on personal life. Secondly, they studied rescue workers who are likely to be experienced in high-stress scenarios, and may have highly developed coping strategies. Thirdly, they narrowly define burnout as a one-dimensional construct, solely exploring emotional exhaustion. These three factors may have contributed to the low levels of burnout reported in their study.

While there is limited evidence regarding disaster impact on burnout, inferences can be drawn from research investigating the interplay between stressors within the work domain and the non-work domain. Greenhaus and Parasuraman (1987) argue that both non-work stress and work stress can spill-over negatively to job outcomes (and vice versa), and/or that non-work pressures can exacerbate the simultaneous occurrence of work pressures (and vice versa), and/or that strain is an accumulation of stress from both work and non-work domains. For example, research has found that family stressors are related to job satisfaction (Ford et al., 2007), and that family-to-work conflict is related to burnout (Cinamon & Rich, 2010; Rupert, Stevanovic, & Hunley, 2009). Similar to the family-related stressors explored within these studies, it is also likely that life stress arisen from disasters will spill-over to work outcomes, such as burnout. Therefore, it is hypothesised that:

Hypothesis 1

- a) *Personal disaster impact* will be positively related to *emotional exhaustion*
- b) *Personal disaster impact* will be positively related to *cynicism*

School disaster impact.

Not only have the earthquakes impacted on many people's personal lives, but they have had a profound effect on schools across Christchurch. Nearly all of the 215 state and integrated schools in Christchurch have experienced some damage to infrastructure, that will require an estimated \$500 to \$750 million dollars from the government to repair (Ministry of Education, 2012a). Some schools, particularly in the eastern suburbs of Christchurch, have had damage so extensive that they have had to either move into temporary locations or to share sites with other schools. Not only have teachers been subjected to uncertain and insecure working conditions, but schools have also experienced shortened and disrupted school years, fluctuating student enrolments, and disruptive pupil behaviour (Ministry of Education, 2012a). Additionally, due to the consequences of the earthquakes, the government has proposed that some schools close or merge with other schools in future years (Ministry of Education, 2012b). Considering the vast amount of difficulties schools have faced, this study proposes that the extent to which a school has been affected by the disaster will have serious consequences for their teachers; in particular that *school disaster impact* will be an important antecedent in the presentation of teacher burnout.

Hochwarter and colleagues (2008) investigated employees after the 2005 hurricanes in Florida, and focussed on job disaster impact, operationalised as hurricane-induced job stress. They found that hurricane-induced job stress was associated with elevated levels of job tension, but not with decreased job satisfaction (Hochwarter et al., 2008). Similarly, it is likely that earthquake-related work impact will be associated with burnout. Specifically, it is expected that teacher burnout levels will be greater in schools that were more affected by the earthquakes (i.e., greater *school disaster impact*). Hence, the following relationships are hypothesised:

Hypothesis 2

a) *School disaster impact* will be positively related to *emotional exhaustion*

b) *School disaster impact* will be positively related to *cynicism*

School responsiveness to the disaster.

While individual level characteristics have received some attention in disaster research, less is understood about organisational-level factors that may link to employee outcomes. One such factor that may elicit positive responses from employees is employee perceptions that their organisation coped effectively with a disaster.

Research on emergency workers dealing with traumatic events highlights the organisations' role in building resilience and post-traumatic growth (Shakespeare-Fitch, 2005). Organisations can foster this resilience and growth through supportive practices, policies and management styles (Shakespeare-Fitch, 2005). Research on organisational response to disasters and employee outcomes outside the emergency service sector is still scarce. However, a quantitative study after the September 11, 2001 terrorist attack found significant relationships between organisation's post-disaster response and event-related strain and job satisfaction (Byron & Peterson, 2002). Specifically, in organisations that provided targeted organisational support to employees, these employees reported higher levels of event-related strain, but were more satisfied with their jobs (Byron & Peterson, 2002). Simple organisational responses such as allowing employees to openly talk about tragedy and sending a company-wide email expressing concern for victims, represent some of the measures in place that were associated with job satisfaction (Byron & Peterson, 2002). In the Christchurch post-earthquake context, recent qualitative research has found that organisational practices such as communicating with employees to determine their safety, ensuring basic human needs are met, and providing ongoing organisational support in the long-term were perceived positively by employees (Nilakant & Walker, 2012). Furthermore,

they argue that the concept of organisational justice is particularly important in a disaster context, and that employees are acutely aware of justice in the organisational support provided. They argue that employees that perceive organisational support is distributed fairly, through a just process, and that it is delivered empathetically, are more likely to be engaged with their work. Considering employee engagement is thought of as the positive antithesis of burnout (Maslach et al., 2001), organisational support may play an important role in mitigating burnout in a post-disaster context. Indeed, even under a stable external environment, support is considered a job resource that can protect employees from developing burnout, and in particular cynicism (Demerouti et al., 2001).

The present study does not address specific organisational support or interventions related to the earthquake per se, but rather considers the impact of perceived effectiveness of the organisations' response to the disaster on employee well-being. Specifically, for this study the variable *school responsiveness to the disaster*, defined as employee perceptions regarding the effectiveness of the schools' policies and practices in response to the disaster environment, is proposed as an important antecedent in the presentation of burnout. While there is no literature to guide a hypothesis, it is expected that high levels of *school responsiveness to the disaster* will be a health-protecting factor associated with more positive teacher outcomes. Therefore, it is hypothesised that:

Hypothesis 3

- a) *School responsiveness to the disaster* will be negatively related to *emotional exhaustion*
- b) *School responsiveness to the disaster* will be negatively related to *cynicism*

Role-related antecedents.

Role theory suggests that stress responses emerge when employees experience expectations that are conflicting, overloading, or ambiguous (Örtqvist & Wincent, 2006). Accordingly, the three facets of role stress include role conflict, role overload and role

ambiguity, and have been found to differentially relate to a number of stress outcomes (Örtqvist & Wincent, 2006). Role stress has been found to play a strong role in the etiology of burnout (Alarcon, 2011; Lee & Ashforth, 1996; Maslach et al., 2001). In particular, the teaching profession has been documented as an occupation characterised by many role demands (Sutton, 1984). Indeed, role conflict and role overload have been found to be some of the strongest predictors in teacher's stress in schools (Pettegrew & Wolf, 1982). Contrastingly, role ambiguity has been found to play a much smaller role in teachers' emotional exhaustion and cynicism levels (Schwab & Iwanicki, 1982a). Therefore, the following sections discuss role conflict and role overload as proposed antecedents to burnout within a disaster context.

Role conflict.

Role conflict has been defined as the lack of compatibility between different expectations of a role (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). For example, in the teaching profession teachers may experience incompatibility between student, parent, and administration demands (Pettegrew & Wolf, 1982). While most studies identify a link between role conflict and burnout, different studies reveal unique relationship patterns of role stressors across the burnout dimensions. In their meta-analysis, Örtqvist and Wincent (2006) found a small effect size for role conflict and emotional exhaustion, and an almost non-existent effect size for depersonalisation. However, a recent meta-analysis by Alarcon (2011) found role conflict to have a strong positive relationship with both emotional exhaustion and cynicism. In the education sector, research has found that role conflict accounts for a significant amount of variance in both emotional exhaustion and cynicism (Schwab & Iwanicki, 1982a; Schwab et al., 1986). Interestingly, Byrne (1994) found that role conflict was correlated with emotional exhaustion in elementary and intermediate teachers, but with depersonalisation for secondary school teachers. However, recent research of Australian

primary and secondary school teachers found that role conflict was a powerful predictor of depersonalisation only (Dorman, 2003). Furthermore, role conflict was related to depersonalisation through the mediator of school environment. Accordingly, increases in role conflict predicted negative perceptions of school climate, which in turn, predicted teachers' cynical attitudes toward work (Dorman, 2003).

Despite the somewhat inconsistent findings of specific patterns of correlations between role conflict and the burnout dimensions, research has consistently revealed that role conflict is perceived as a negative experience, and that it is significantly related to increased burnout. While research is yet to explore whether role conflict remains a stressor within uncertain environments, role conflict is likely to be particularly salient within these contexts. For example, teachers in Christchurch may experience difficulty in facing the competing demands from school administration to adopt a business as usual approach to delivering curriculum content, and their perceived obligation to moderate their pace to accommodate students that are emotionally and cognitively depleted. Therefore, the present study will investigate the relationship between role conflict and burnout within a post-disaster context. While there is no literature to guide a hypothesis within a disaster environment, it is expected that role conflict will remain a problem for teachers in Christchurch, and that increases in role conflict will be related to an increase in burnout feelings. Specifically:

Hypothesis 4.

- a) *Role conflict* will be positively related to *emotional exhaustion*
- b) *Role conflict* will be positively related to *cynicism*

Role overload.

Role overload has been defined as the extent to which employees perceive that the time and resources available to meet expectations to fulfil a role are inadequate (Örtqvist & Wincent, 2006). Meta-analyses reveal that role overload is associated with both emotional

exhaustion and cynicism (Alarcon, 2011; Lee & Ashforth, 1996; Örtqvist & Wincent, 2006).

In particular, researchers have noted that role overload is a strong predictor of emotional exhaustion (Maslach et al., 2001; Leiter & Maslach, 2009). This has been replicated within the teaching profession, with role overload being found to be a potent predictor of emotional exhaustion (Dorman, 2003). Furthermore, Dorman (2003) found that increases in role overload were associated with increased feelings of work pressure, which in turn, were associated with emotional exhaustion.

Overall, studies reveal that role overload is detrimental to work outcomes, and is related to employee burnout. While research is yet to explore whether role overload remains a stressor within uncertain environments, such as a post-disaster environment, it is likely that role overload is salient within these contexts. Qualitative research has found that employees in the service sector reported increases in workload, and felt additional pressure from interacting with highly stressed customers after the Christchurch earthquakes (Nilakant & Walker, 2012). Similarly, role overload may be particularly pertinent for teachers, as they deal with additional roles and responsibilities brought about from the earthquake. For example, in addition to teachers' educating and administration roles, teachers are often expected to deal with student problems (Maslach et al., 1996), which are highly salient in Christchurch schools in the present environment. Indeed, a high incidence of student behavioural and psychological problems has been reported within Christchurch schools (Ministry of Education, 2012a). With these amplified roles and expectations within a disaster-context, teachers may feel particularly overloaded and distressed at work. The present study will investigate this, and explore whether role overload and burnout are related within a post-earthquake context. While there is no literature to guide a hypothesis, it is expected that role overload will remain a salient issue for teachers in Christchurch, associated with the experience of burnout. Specifically:

Hypothesis 5

- a) *Role overload* will be positively related to *emotional exhaustion*
- b) *Role overload* will be positively related to *cynicism*

Outcomes of burnout.

In addition to uncovering its antecedents, research has also explored associations between burnout and important work outcomes. For example, in their review of the literature Maslach and colleagues discuss relationships between burnout and job performance, health, absenteeism and turnover (Maslach et al., 2001). The present study will focus on teacher turnover as a potential outcome of emotional exhaustion and cynicism in a disaster context.

Turnover intentions.

Thousands of dollars are lost when a single teacher leaves a school (Barnes, Crowe & Schaefer, 2007). Furthermore, high turnover levels not only affect the financial viability of schools, but have also been shown to relate to poorer school performance (Barnes et al., 2007). Due to the severe financial and human costs associated with teacher turnover, it is essential to investigate whether turnover is indeed a cause of burnout within a disaster environment, and explore the antecedents of burnout, in order to provide usable recommendations to schools.

Research within stable work environments has found that voluntary turnover is related to burnout (Wright & Cropanzano, 1998; Swider & Zimmerman, 2010). Furthermore, meta-analyses reveal that intentions to turnover have moderate positive relationships with emotional exhaustion and cynicism (Alarcon, 2011; Lee & Ashforth, 1996). Similarly, Swider and Zimmerman (2010) found turnover related to both facets of burnout; however, they found that depersonalisation was the most proximal antecedent of turnover, while emotional exhaustion was the most proximal antecedent of absenteeism. They argue that

employees with high levels of cynicism distance themselves from their work, and that this manifests behaviourally through turnover. In contrast, employees with high levels of emotional exhaustion are likely to find that temporary separation from work (i.e., absenteeism) is a way in which they can recuperate their emotional resources, rather than taking the drastic measure of turnover (Swider & Zimmerman, 2010). However, in the teaching profession emotional exhaustion appears to play a larger role in predicting intentions to turnover (Schwab et al., 1986). According to Schwab et al. (1986) emotionally exhausted teachers were more likely to have increased intentions to quit and increased absenteeism, while cynical teachers were more likely to exert less effort at work. With these contradictory studies, it is clear that more research is needed to determine the exact nature of associations between the burnout dimensions and turnover.

Within a disaster context, turnover intentions are yet to be studied. Studies suggest that another withdrawal behaviour, absenteeism, has a unique relationship with disaster exposure (Byron & Peterson, 2002; Qin & Jiang, 2011), yet the findings are mixed and inconclusive. After the Wenchuan Chinese earthquake in 2008, absenteeism levels decreased (Qin & Jiang, 2011). In contrast, after the September 11 terrorist attack, employees were more likely to be absent (Byron & Peterson, 2002). The inconsistency in these findings may represent cultural differences, the differences in the source of the disaster (i.e., natural disaster versus non-natural disaster), or the differences in organisational responsiveness to the disaster. Nonetheless it is clear the withdrawal behaviour of absenteeism has a complex relationship with disaster exposure.

The research to date has examined absenteeism in a disaster context, but not turnover. However, this is essential to explore, as recent reports suggest that Christchurch organisations are reporting great difficulties in retaining their staff after the 2010 and 2011 earthquakes (Department of Labour, Labour & Immigration Research Centre, 2011). Therefore, this study

addresses an important gap in the literature. While there is no research to guide hypotheses within a disaster environment, the robust findings from stable external environments suggest that employees with high levels of burnout are more likely to want to leave their organisation (Alarcon, 2011; Lee & Ashforth, 1996; Wright & Cropanzano, 1998; Swider & Zimmerman, 2010). This may replicate across a disaster environment, whereby teachers may feel that the drastic measure of turnover is needed to counteract burnout brought about from the culmination of work and non-work stress factors. Specifically, it is hypothesised that:

Hypothesis 6

- a) *Emotional exhaustion* will be positively related to *turnover intentions*
- b) *Cynicism* will be positively related to *turnover intentions*

The Mediating Role of Burnout.

There is an underlying assumption in the literature that burnout plays an important mediating role between burnout antecedents and organisational outcomes, yet there is somewhat limited empirical evidence exploring this. Recently, with the expansion of the Job Demands-Resources Model (Demerouti et al., 2001), some studies have found burnout to mediate the relationships between job demands, job resources, and a number of organisational outcomes (e.g., Bakker et al., 2008; Bakker, Demerouti & Verbeke, 2004; Hakanen, Bakker, & Schaufeli, 2006; Schaufeli & Bakker, 2004; Hu, Schaufeli, & Taris, 2011). In particular, while emotional exhaustion was not found to be a mediator, Bakker et al., (2008) found that cynicism was a mediator in the job resources (colleague support, team cohesion and harmony) and objective performance link. Additionally, Bakker et al., (2004) found that in-role performance was associated with the job demands of work pressure and emotional demands, through their relationship with the mediator of exhaustion. In contrast, they found that job resources (e.g., autonomy and social support) predicted extra-role

performance, through their relationship with disengagement (e.g., cynicism) (Bakker et al., 2004). Other studies have explored burnout as a composite of emotional exhaustion and cynicism, and have found burnout to play a mediating role between job demands and ill health (Hakanen et al., 2006; Schaufeli & Bakker, 2004). In particular, this relationship was established in a sample of Finnish teachers, whereby the job demands of disruptive pupil behaviours, work overload and poor physical environment predicted burnout, which in turn, predicted ill health (Hakanen et al., 2006).

Preliminary research also indicates that burnout may play an important role in the link between burnout antecedents and the organisational outcome of turnover intentions. Schaufeli and Bakker (2004) found that the positive antithesis of burnout, engagement, mediates the relationship between job resources and turnover intentions. Furthermore, Hu et al., (2011) discovered that job demands (i.e., workload, emotional demands, physical effort, and interpersonal conflict) predicted burnout (conceptualised as the composite of exhaustion and cynicism), which in turn, predicted turnover intentions and organisational commitment. As these studies group job demands, burnout, and organisational outcomes as larger composites, it is difficult to ascertain unique effects and patterns in relationships. In contrast, Leiter and Maslach (2009) explored whether cynicism and/or emotional exhaustion had a unique mediating effect between a lack of person-job fit in work-life areas (work-life areas were defined as workload, values, reward, control, community and fairness) and turnover intentions in a sample of nurses. Their results revealed that cynicism was the only burnout dimension that mediated the antecedent to turnover intentions relationship (Leiter & Maslach, 2009), providing additional support for studies that suggest cynicism is a stronger predictor of turnover than emotional exhaustion (e.g., Swider & Zimmerman, 2010).

While there is limited literature to guide specific hypotheses as related to each antecedent of this study, the literature reveals that burnout often mediates the link between

job demands and/or resources and organisational outcomes. In this study it is proposed that both emotional exhaustion and cynicism will act as mediators between the independent variables (i.e., disaster-related antecedents and role-related antecedents) and the outcome of turnover intentions (see Figure 2). Specifically it is hypothesised that:

Hypothesis 7. *Emotional exhaustion* will be a mediator between the independent variables and *turnover intentions*. Specifically:

- a) *Emotional exhaustion* will mediate the relationship between *personal disaster impact* and *turnover intentions*
- b) *Emotional exhaustion* will mediate the relationship between *school disaster impact* and *turnover intentions*
- c) *Emotional exhaustion* will mediate the relationship between *school responsiveness to disaster* and *turnover intentions*
- d) *Emotional exhaustion* will mediate the relationship between *role conflict* and *turnover intentions*
- e) *Emotional exhaustion* will mediate the relationship between *role overload* and *turnover intentions*

Hypothesis 8. Cynicism will be a mediator between the independent variables and turnover intentions. Specifically:

- a) *Cynicism* will mediate the relationship between *personal disaster impact* and *turnover intentions*
- b) *Cynicism* will mediate the relationship between *school disaster impact* and *turnover intentions*
- c) *Cynicism* will mediate the relationship between *school responsiveness to disaster* and *turnover intentions*

- d) *Cynicism* will mediate the relationship between *role conflict* and *turnover intentions*
- e) *Cynicism* will mediate the relationship between *role overload* and *turnover intentions*

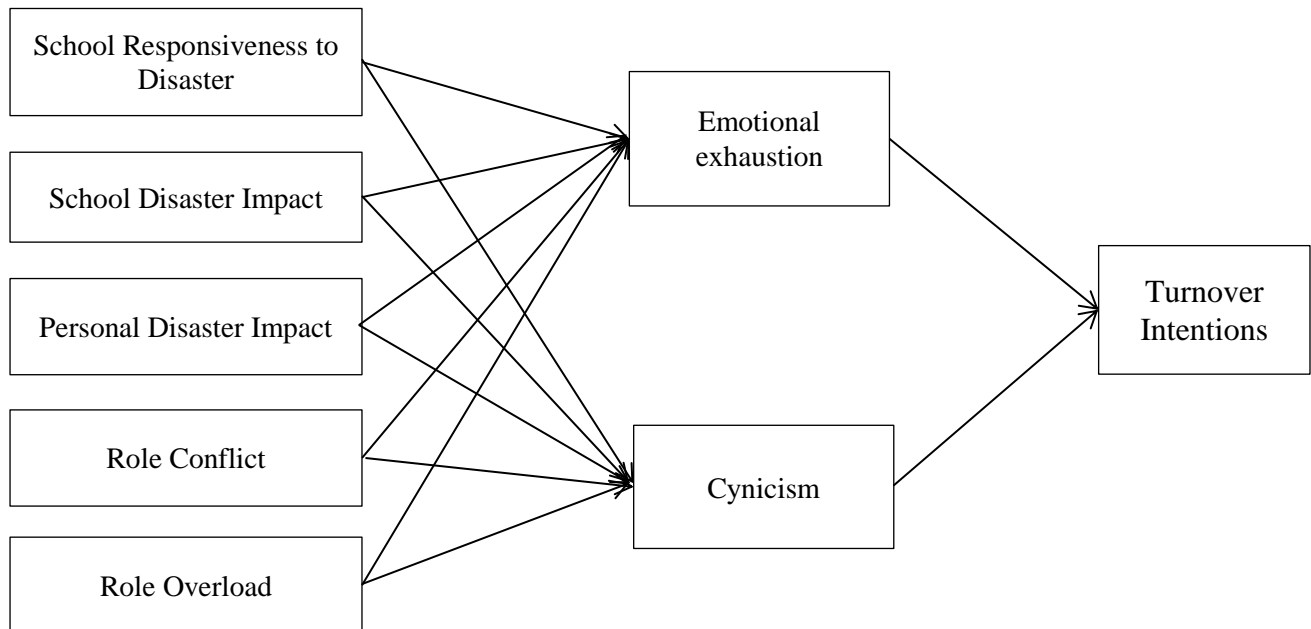


Figure 2. Teacher Burnout Model

Note: age, gender, teaching-level are covariates

Method

Participants and Procedure

In order to recruit the intended sample of school teachers, principals from 37 schools across Christchurch were approached about this project and asked to distribute an online survey to their staff. The schools targeted were chosen by convenience, and through personal networks. However, in order to reach a representative sample of schools in differentially affected earthquake areas, a deliberate effort was made to approach schools from various suburbs across the city. Principals were given a summary of the research, were informed that the participants' identities would remain anonymous, the schools surveyed would be kept

confidential, and that participation was entirely voluntary. Of the 37 schools that were approached, 29 principals agreed to distribute the survey link to their staff via email.

The final sample was comprised of 125 teachers, 29 male and 94 female (two of the participants declined to state their gender). The sample included 61 primary, 7 intermediate, 53 secondary, and 4 teachers that taught more than one level. The mean age of the participants was 44.93 years ($SD=11.87$) and the mean tenure with the school was 8.95 years ($SD=7.57$).

Data was collected over a four-month period, from August through to November 2012. As the responses were completely anonymous and teachers could not be matched with specific schools, the response rate of survey completion is unknown. All measures were combined into an online survey using Qualtrics Survey Software (2011). The first page of the survey contained information regarding the research, and required participants to consent to be involved in the study. Next, the survey prompted participants to enter demographic information: age, gender, teaching-level, and tenure. The following pages of the survey involved the disaster variables, the role variables, the mediator variables regarding burnout, and the dependent variable of turnover intention. Finally, the last page of the survey thanked the participants for completing the survey, and invited them to comment on the survey. The subsequent sections describe each of the scales in detail.

Measures

Basic demographic information was collected in the survey to be later used as covariates, as well as three disaster measures and two role measures representing the independent variables. Additionally, the two burnout dimensions of emotional exhaustion and cynicism were measured, representing mediating variables, and a measure of turnover intentions represented the outcome variable. See Appendix A for scale items.

The *Personal Disaster Impact* scale consisted of nine items, assessing the extent of the earthquake's negative impact on the participants' personal lives. There was a general introductory sentence to the items of this scale – *The 2010 and 2011 Earthquake Events have negatively impacted* – followed by sample items, including: “my financial situation”, “my health” and “my housing situation through severe damage to or loss of property”.

Participants were asked to rate how each item had been negatively impacted on since the earthquakes, on a 5-point Likert scale ranging from 1 (to a very little extent) to 5 (to a very large extent). Higher scores indicated more severe impact on personal life. Two items “the health of one or more of my family members” and “my housing situation by adding occupants (e.g., relatives, friends) to my residence” were deleted from further analyses after principal axis factoring using oblimin rotation revealed low factor loadings (smaller than .4) on the single factor that was obtained. After removing these items, internal consistency was found to be $\alpha=.79$.

The *School Disaster Impact* scale consisted of five items, assessing the earthquake's negative impact on school buildings, infrastructure, facilities, work materials, sensitive documents, and the deterioration of teaching provision. As with the personal impact scale, there was a standard introductory sentence to the items. An example item includes, “damage to, or loss of, important or sensitive school documents (e.g., student files, teaching resources)”. Participants were asked to rate each item on a five-point Likert scale, ranging from 1 (to a very little extent) to 5 (to a very large extent). Higher scores indicate that the earthquake had a more severe impact on their school. Principal axis factoring using oblimin rotation revealed all items loaded on a single factor. The internal consistency was found to be $\alpha=.88$.

The *School Responsiveness to Disaster* items were developed for this study to measure participant perceptions of school effectiveness in addressing student and staff needs

after the earthquake. Participants were asked to specify the extent to which they agreed or disagreed with seven statements. Example items include: “the school has adequately met student needs in the disaster environment” and “the policies and practices in my school have been adequately revised to better address staff needs in a disaster environment”. Responses to each statement were anchored/provided on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Principal axis factoring using oblimin rotation revealed all items loaded on a single factor. Internal consistency was found to be a Cronbach alpha of 0.91.

Role Conflict was measured using all five items adapted from the Pettegrew and Wolf (1982) ‘Teacher Stress Scale’. Item two of this scale was adapted to the New Zealand sample by changing the word ‘buck’ to ‘ignore’, and, to ensure consistency with the remainder of the instrument, a five-point scale was used instead of a six-point scale. Participants were asked to specify the extent to which they agreed or disagreed with each item, from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher levels of role conflict. An example item includes, “I receive conflicting demands from two or more people or groups in the school setting”. Past research has shown that this scale possesses good internal consistency, with a Cronbach alpha of .82 (Pettegrew & Wolf, 1982), which was replicated in the current study ($\alpha=.82$).

Role Overload was measured using all five items adapted from Peterson and colleagues role overload subscale from the ‘Cross-cultural role conflict, ambiguity, and overload scale’ (Peterson et al., 1995). Items two and three were slightly reworded to reflect the realities of role overload in a school setting, for example “I feel overburdened in my roles at school (e.g., teaching, administration work)”. Participants were asked to specify the extent to which they agreed or disagreed with the five statements, on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Example items include: “there is

need to reduce some parts of my role” and “my workload is too heavy”. Higher scores indicate higher levels of role overload. Peterson and colleagues (1995) obtained a coefficient alpha of .93. For this study, a high internal consistency was also obtained, with a Cronbach alpha of 0.90.

The ‘Maslach Burnout Inventory Educators Survey’ (*MBI-ES*, Maslach et al., 1996) was utilised to measure the two core burnout dimensions, *emotional exhaustion* and *cynicism*. The *reduced personal efficacy* subscale of the MBI-ES was omitted from this study, as this is argued to be peripheral to the burnout construct (Shirom, 2005; Bakker et al., 2004). The *emotional exhaustion* subscale consists of 9 items (e.g., “I feel emotionally drained from my work”), and the *cynicism* subscale consists of 5 items (e.g., “I feel I treat some students as if they were impersonal objects”). Participants were asked to rate the frequency at which they experienced feelings associated with each item, ranging from 1 (never) to 7 (daily). Reliability studies show internal consistency of the *emotional exhaustion* scale ranging from $\alpha = 0.88$ to $\alpha = .90$ (Iwanicki & Schwab, 1981; Gold, 1984; Whitehead, Ryba & O’Driscoll, 2000). In this study, principal axis factoring using oblimin rotation analysis revealed that the *emotional exhaustion* scale had a two-factor structure, with the item “working with people directly puts too much stress on me” loading strongly on a second factor. When this item was removed, the original single-factor structure was achieved and a Cronbach’s alpha of .90 was obtained. Therefore, this item was removed from further analyses. For the *cynicism scale*, reliability studies show internal consistency ranging from $\alpha = 0.74$ to $\alpha = 0.79$ (Iwanicki & Schwab, 1981; Gold, 1984; Whitehead et al., 2000). For this study, all items in the *cynicism* scale loaded on a single factor, and a Cronbach alpha of .86 was obtained.

Turnover Intention was measured using all three items from the Sjöberg & Sverke (2000) ‘Turnover Intention’ scale, including the statements: “I am actively looking for other jobs”, “I feel I could leave this job” and “If I was completely free to choose I would leave

this job”. Participants were asked to specify the extent to which they agreed or disagreed with these three statements, on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a stronger intent to leave employment. Replicating past research that obtained a Cronbach alpha of .83 (Sjöberg & Sverke, 2000), this study also obtained internal consistency of $\alpha = 0.83$.

Results

In order to establish basic relationships, and to test hypotheses 1- 6, descriptive statistics and correlations between the independent variables, mediators, the dependent variable, and covariates were calculated, as seen in Table 1. Of note, the mean level of cynicism scores was low ($M=2.08$, $SD=1.32$), while emotional exhaustion was above the midpoint of the MBI 7-point scale ($M=4.01$, $SD=1.33$). Consistent with hypothesis 1a, *personal disaster impact* was positively and significantly correlated with *emotional exhaustion* ($r=.25$, $p<.01$). However, contrary to hypotheses 1b, *personal disaster impact* was not found to have a significant positive correlation with *cynicism* ($r=.04$, ns). Both the burnout dimensions, *emotional exhaustion* and *cynicism* were positively and significantly correlated with *school disaster impact* ($r=.20$, $p<.05$ and $r=.26$, $p<.01$ respectively), consistent with hypotheses 2a and b. Additionally, supporting hypothesis 3a and b, *school responsiveness to the disaster* was negatively and significantly correlated with *emotional exhaustion* ($r=-.43$, $p<.01$) and *cynicism* ($r=-.44$, $p<.01$). The role stressors, *role conflict* and *role overload* were also found to have significant relationships with *emotional exhaustion* ($r=.54$, $p<.01$ and $r=.65$, $p<.01$ respectively) and *cynicism* ($r=.47$, $p<.01$ and $r=.26$, $p<.01$ respectively), consistent with hypotheses 4 and 5. According to hypothesis 6, the burnout dimensions of *emotional exhaustion* and *cynicism* would be positively correlated with

turnover intention, which was also supported in the data ($r=.40, p<.01$ and $r=.40, p<.01$ respectively).

To test hypotheses 7 and 8, a mediation analysis was conducted using Hayes and Preacher's (2011) MEDIANTE Macro for SPSS (<http://www.afhayes.com/spss-sas-and-mplus-macros-and-code.html>). MEDIANTE conducts sophisticated mediation analyses that can accommodate for multiple independent variables, mediators, and covariates simultaneously, providing unstandardized coefficients. For this study, *turnover intentions* was entered as a dependent variable; *school responsiveness to disaster*, *school disaster impact*, *personal disaster impact*, *role conflict* and *role overload* were entered as independent variables; and *emotional exhaustion* and *cynicism* were tested as mediators. Based on previous research that has indicated relationships between personal/occupational characteristics and burnout, *age*, *gender*, and *teaching-level* were entered into the analyses as covariates. Controlling for these covariates, MEDIANTE tests for total, direct and indirect effects of *school responsiveness to disaster*, *school disaster impact*, *personal disaster impact*, *role conflict*, and *role overload* on *turnover intentions*, through the mediators *emotional exhaustion* and *cynicism*. Analyses of indirect effects were tested using bias-corrected bootstrap confidence intervals (95 percent), utilising 10000 samples. Indirect effects were considered to be significant if the confidence intervals did not include zero.

Table 1: Means, Standard Deviations, Internal Consistencies (Cronbach Alphas on the Diagonal), and Correlations Between the Study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	44.93	11.87	-										
2. Gender	-	-	.01	-									
3. Level	-	-	.13	-.21*	-								
4. PDI	2.33	.83	-.03	.10	.03	(.79)							
5. SDI	2.51	1.04	.03	-.10	.21*	.30**	(.88)						
6. SRD	3.75	.90	-.08	.21*	-.31**	-.18	-.19*	(.91)					
7. RC	2.66	.86	-.12	-.17	.22*	.19*	.20*	-.60**	(.82)				
8. RO	3.16	.92	-.06	-.03	.16	.25**	.19*	-.45**	.65**	(.90)			
9. EE	4.01	1.33	-.00	.05	.09	.25**	.20*	-.43**	.54**	.65**	(.90)		
10. CYN	2.08	1.32	-.01	-.27**	.14	.04	.26**	-.44**	.47**	.26**	.56**	(.86)	
11. TI	2.57	1.24	.12	-.05	.12	.23*	.17	-.46**	.40**	.29**	.40**	.40**	(.83)

Note: N=125; PDI= Personal disaster impact; SDI= School disaster impact; SRD= School Responsiveness to Disaster; RC= Role Conflict; RO= Role overload; EE=Emotional Exhaustion; CYN= Cynicism; TI= Turnover Intention; * $p < .05$, ** $p < .01$

A full table of the mediation results is presented in Appendix B, and the models' significant and approaching significant relationships are presented in Figure 3.

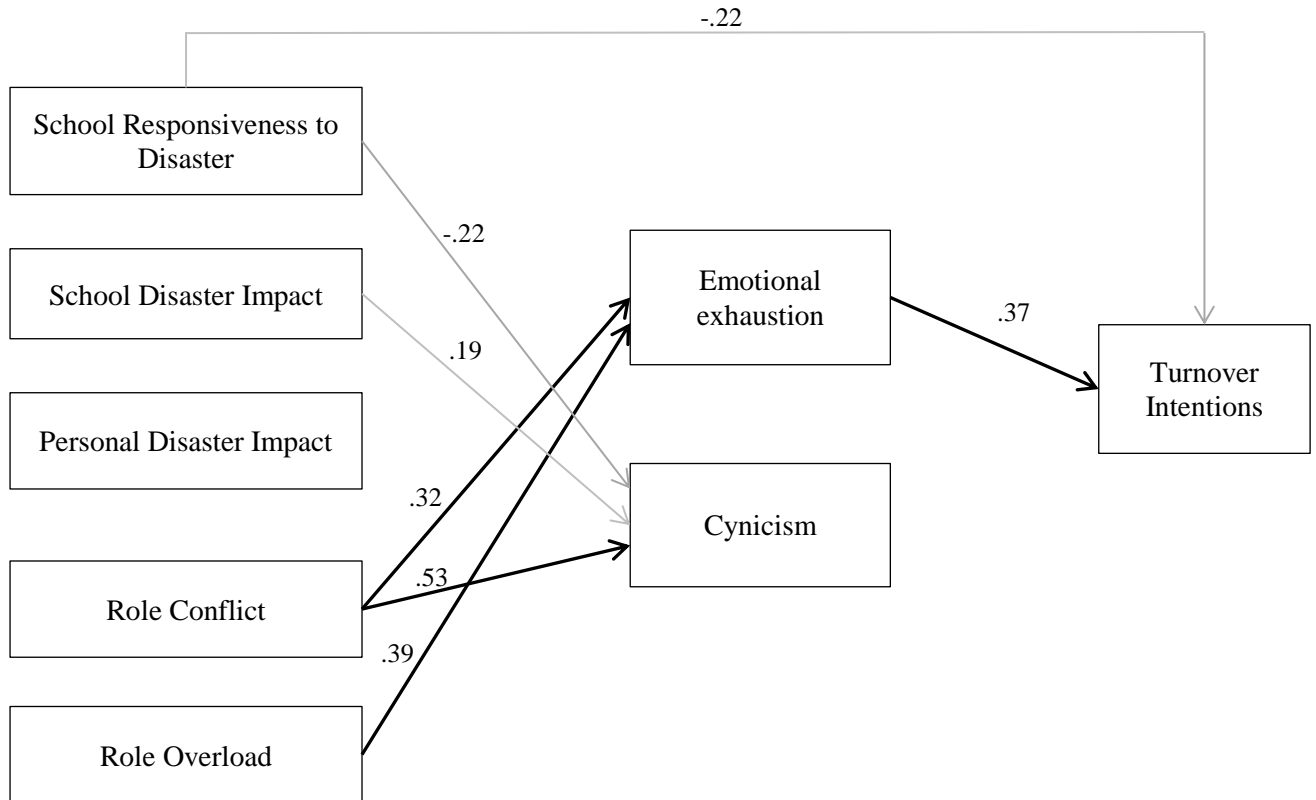


Figure 3. Direct Effects in the Teacher Burnout Model (b regression coefficients). Significant results at $p < .05$ are included in bold arrows. Approaching significant results $p < .10$ are in grey arrows. Note: age, gender and teaching-level are entered as covariates.

Firstly the direct effects of the independent variables on *emotional exhaustion* and *cynicism* were analysed. Both the emotional exhaustion and cynicism direct effect models were significant ($R^2 = .50$, $p < .001$ and $R^2 = .31$, $p < .001$ respectively). As seen in Figure 3, results for the independent variables' unique contribution to *emotional exhaustion* show that only *role conflict* and *role overload* have a direct effect on emotional exhaustion ($b = .32$, $p < .01$ and $b = .39$, $p < .001$ respectively). These relationships indicate that both high role conflict and high role overload are associated with greater emotional exhaustion. In contrast,

none of the disaster related variables had a direct effect on *emotional exhaustion*. With respect to the mediator of *cynicism*, the only direct effect found was with *role conflict* ($b=.53$, $p<.001$). This relationship indicates that high role conflict is associated with greater levels of cynicism. However, the direct effects of *school responsiveness to disaster*, and *school disaster impact* on *cynicism* approached significance ($b=-.22$, $p=.08$, and $b=.19$, $p=.06$ respectively).

The model for the direct effects on *turnover intentions* was also significant ($R^2=.29$, $p<.001$). *Emotional exhaustion* had a significant direct effect on *turnover intentions* ($b=.37$, $p<.05$), indicating that high levels of emotional exhaustion are associated with increased turnover intentions. In contrast, *cynicism* was not significantly related to *turnover intentions* when controlling for the independent variables ($b=.14$, ns). Results showed that none of the independent variables had a significant direct effect on *turnover intentions*, although *school responsiveness to disaster* approached significance ($b=-.22$, $p=.08$).

Finally, the analysis of indirect effects allowed the testing of hypotheses 7 and 8, to determine whether burnout mediated the relationship between the independent variables and turnover intention. The indirect effects indicate that the burnout dimension of *emotional exhaustion* was a mediator, but only with the independent variables of *role conflict* and *role overload*. Consistent with hypothesis 7d, *role conflict* impacted *turnover intentions* through *emotional exhaustion* ($b = .12$, 95%CI [.02,.30]). Additionally, *role overload* impacted *turnover intentions* through *emotional exhaustion* ($b = .14$, 95%CI [.03,.33]), thus supporting hypothesis 7e. These findings support a full mediation model whereby high role conflict and high role overload are related to increased emotional exhaustion, which in turn is related to high turnover intention. In contrast, *cynicism* was not found to be a mediator for any of the independent variables; thus, failing to confirm hypothesis 8. To conclude, Table 2 presents the hypotheses for this study and states whether these hypotheses were supported.

Table 2. Summary and Conclusions on Hypotheses

No.	Hypothesis	Result
1 a	<i>Personal disaster impact</i> will be positively related to <i>emotional exhaustion</i>	Supported
1 b	<i>Personal disaster impact</i> will be positively related to <i>cynicism</i>	Failed to support
2 a	<i>School disaster impact</i> will be positively related to <i>emotional exhaustion</i>	Supported
2 b	<i>School disaster impact</i> will be positively related to <i>cynicism</i>	Supported
3 a	<i>School responsiveness to the disaster</i> will be negatively related to <i>emotional exhaustion</i>	Supported
3 b	<i>School responsiveness to the disaster</i> will be negatively related to <i>cynicism</i>	Supported
4 a	<i>Role conflict</i> will be positively related to <i>emotional exhaustion</i>	Supported
4 b	<i>Role conflict</i> will be positively related to <i>cynicism</i>	Supported
5 a	<i>Role overload</i> will be positively related to <i>emotional exhaustion</i>	Supported
5 b	<i>Role overload</i> will be positively related to <i>cynicism</i>	Supported
6 a	<i>Emotional exhaustion</i> will be positively related to <i>turnover intentions</i>	Supported
6 b	<i>Cynicism</i> will be positively related to <i>turnover intentions</i>	Supported
7 a	<i>Emotional exhaustion</i> will mediate the relationship between <i>personal disaster impact</i> and <i>turnover intentions</i>	Failed to support
7 b	<i>Emotional exhaustion</i> will mediate the relationship between <i>school disaster impact</i> and <i>turnover intentions</i>	Failed to support
7 c	<i>Emotional exhaustion</i> will mediate the relationship between <i>school responsiveness to disaster</i> and <i>turnover intentions</i>	Failed to support
7 d	<i>Emotional exhaustion</i> will mediate the relationship between <i>role conflict</i> and <i>turnover intentions</i>	Supported
7 e	<i>Emotional exhaustion</i> will mediate the relationship between <i>role overload</i> and <i>turnover intentions</i>	Supported
8 a	<i>Cynicism</i> will mediate the relationship between <i>personal disaster impact</i> and <i>turnover intentions</i>	Failed to support
8 b	<i>Cynicism</i> will mediate the relationship between <i>school disaster impact</i> and <i>turnover intentions</i>	Failed to support
8 c	<i>Cynicism</i> will mediate the relationship between <i>school responsiveness to disaster</i> and <i>turnover intentions</i>	Failed to support
8 d	<i>Cynicism</i> will mediate the relationship between <i>role conflict</i> and <i>turnover intentions</i>	Failed to support
8 e	<i>Cynicism</i> will mediate the relationship between <i>role overload</i> and <i>turnover intentions</i>	Failed to support

Discussion

Summary of findings

This study aimed to explore correlates of burnout within a post-disaster context, by investigating teachers' perceptions and workplace attitudes in the aftermath of the Christchurch earthquakes. The study also proposed a Teacher Burnout Model, whereby the relationships between three disaster-related antecedents (*personal disaster impact*, *school disaster impact* and *school responsiveness to the disaster*), two role-stress antecedents (*role conflict* and *role overload*), and the outcome *turnover intentions* were hypothesised to be mediated by the two dimensions of burnout: *emotional exhaustion* and *cynicism*.

Overall, the disaster-related variables were significantly related to burnout, albeit with mostly weak correlations. The hypothesis suggesting that the earthquakes' impact on personal lives was related to emotional exhaustion was supported, but no significant relationship was found with respect to cynicism levels. Consistent with hypothesis 2, results indicated that teachers from schools that were more heavily impacted by the earthquake experienced increased emotional exhaustion and cynicism. Finally hypothesis 3 was supported, and revealed that school responsiveness to the disaster was negatively associated with emotional exhaustion and cynicism, indicating that teachers working at schools that dealt effectively in a post-earthquake environment were less likely to burn out.

Although not statistically significant within the Teacher Burnout Model, the disaster-related variables played a stronger role in the burnout dimension of cynicism, with direct effects of school disaster impact, and school responsiveness to the disaster on cynicism found to be approaching significance. School responsiveness to the disaster may represent teachers' perceptions of organisational or social support after a disaster, and when this social support is missing or inadequate, teachers develop negative attitudes towards work. This parallels qualitative findings that organisational support is crucial to foster engagement in a disaster

context (Nilakant & Walker, 2012), and quantitative findings that demonstrate an inverse relationship between cynicism and support (Demerouti et al., 2001). Interestingly, results also revealed that school responsiveness to the disaster had an approaching significant direct effect on turnover intentions, indicating that schools' ineffective disaster coping responses has a detrimental impact on turnover, regardless of whether teachers were burnt out.

Supporting hypotheses 4 and 5, role conflict and role overload were both significantly related to emotional exhaustion and cynicism, so that high levels of conflict and workload were associated with an increase in burnout feelings. These findings align with past research that has consistently revealed the detrimental impact of role-related stress on burnout (Alarcon, 2011; Lee & Ashforth, 1996; Maslach et al., 2001; Schwab & Iwanicki, 1982a). Role overload had a particularly strong correlation with, and made a unique contribution to emotional exhaustion when other variables were controlled for. However, it did not have a direct effect on cynicism when other variables within the Teacher Burnout Model were controlled for. This replicates past research that suggests that role overload is a strong predictor of emotional exhaustion (Maslach et al., 2001; Leiter & Maslach, 2009). Role conflict was also associated with cynicism and emotional exhaustion, but had a particularly strong unique effect on cynicism. This supports past research that has revealed associations between role conflict and both dimensions of burnout (Alarcon, 2011; Schwab & Iwanicki, 1982a; Schwab et al., 1986), and its particularly strong relationship with cynicism in a teaching population (Dorman, 2003).

Hypothesis 6 was also supported, with both dimensions of burnout having significant, albeit modest, relationships with turnover intentions, so that increases in burnout were associated with an increase in teachers' intentions to leave their school. These findings are consistent with past research highlighting psychological and physical withdrawal from work as consequences of burnout (Swider & Zimmerman, 2010). These findings are particularly

interesting as survival biases and range restriction could have undermined the relationship between burnout and turnover intentions. For example, as data for this study were collected over a year after the main disaster, some teachers may have already left the schools, so that those that have remained may be (or have become) more resilient (less susceptible to burnout), and less likely to report intent to leave their place of work.

Although not hypothesised, it is noteworthy that when all other variables in the Teacher Burnout Model were statistically controlled for, only emotional exhaustion had a direct effect on turnover intentions. While this contradicts previous research within stable working environments by Swider and Zimmerman (2010) that found cynicism to be the strongest predictor of turnover, it replicates findings from a teaching population that emotional exhaustion plays a stronger role in turnover intentions (Schwab et al., 1986). Furthermore, it is important to note that Swider and Zimmerman (2010) explored actual turnover data, rather than turnover intentions, and that the difference in findings may reflect this. Nonetheless the results from the correlational analyses, and the unique direct effects provide further support for the proposition that burnout has very real and detrimental consequences for organisations.

The Teacher Burnout Model also tested hypotheses that explore whether the independent variables were related to turnover intentions through their relationship with emotional exhaustion and cynicism. Results revealed that only the role stressors (role conflict and role overload) had an indirect effect on turnover intentions through emotional exhaustion, thus supporting hypotheses 7d and 7e. High levels of role conflict and role overload were related to high levels of emotional exhaustion, and in turn, this was related to elevated levels of turnover intentions. This finding corroborates recent research suggesting that job demands, often including job characteristics such as role-related issues, predict burnout which in turn is related to negative organisational outcomes (Bakker et al., 2008; Bakker et al., 2004;

Schaufeli & Bakker, 2004; Hu et al., 2011). Despite research suggesting that cynicism mediates the relationship between specific work-life areas (i.e., person-job incongruences in workload, control, reward, community and fairness) and turnover intentions (Leiter & Maslach, 2009), cynicism was not found to be a significant mediator in this study. Indeed, failing to support the hypothesised relationship, no indirect effects were found between any of the independent variables and turnover intentions, through the proposed mediator of cynicism. The lack of significant results found may reflect characteristics of the teaching sample used, namely the low levels of cynicism reported in this group. Alternatively, as research has indicated that emotional exhaustion is a likely precursor to cynicism (Maslach et al., 2001), it is plausible that the current sample had not yet developed cynical attitudes towards work. However, more research is needed to explore this further.

Overall, the findings reveal that the role stressors played a stronger role in the etiology of burnout, compared to the disaster-related antecedents. In general the role-related antecedents had stronger correlations and significant unique effects on burnout, and showed significant indirect effects on turnover intentions through emotional exhaustion. In contrast, the disaster-related antecedents, in general, had weaker relationships with burnout, and did not elicit any significant direct or indirect effects in the Teacher Burnout Model. Although burnout has not been studied in a post-disaster work context, the large effect sizes found for role overload and role conflict are consistent with literature highlighting the importance of situational work characteristics in burnout (Maslach et al., 2001). Moreover, it is likely that the weaker predictive utility of disaster-related antecedents compared to role-related antecedents, is representative of the time frame when data was collected. In the initial aftermath, the earthquakes' impact on personal and school lives, and the effectiveness of a schools' response to the disaster, may be the first and primary contributors to burnout. However, over time role-related issues may become more salient as teachers cope with the

post-disaster reality at work, and may remain a problem even after immediate personal and school matters are sorted. As data was collected many months after personal and school lives were severely disrupted, this may, in part, explain why role-related problems had more predictive utility than the disaster-related variables.

Limitations and Directions for Future Research

Although this study has revealed interesting and novel findings in burnout research, particularly in a post-disaster context, there are some limitations that must be acknowledged. The first limitation concerns the cross-sectional nature of the study. Firstly, as discussed above, disaster-related stressors may be particularly salient in the initial period after the disaster, whereas work-related problems may be more salient in later stages, or could be particularly enduring throughout. As the present study only captured data at one specific point in time, several months after the earthquakes, results should be interpreted with caution. Researchers have argued that disasters can elicit both positive and negative responses (Paton et al., 2000), and this could also be, in part, dependent on the timeframe post-disaster. For example, qualitative studies have indicated that in the initial aftermath of a disaster, employees are often highly engaged with their work, but over time this engagement diminishes (Nilakant & Walker, 2012). Additionally, this research tested the burnout dimensions simultaneously; however, research has shown the dynamic nature of the burnout syndrome by suggesting that emotional exhaustion and cynicism develop sequentially over time (Maslach et al., 2001; Taris et al., 2005). Furthermore, while the Teacher Burnout Model proposed in this study was based on findings from past research, the cross-sectional nature of this study also limits claims of causality and directionality. Reverse causality is plausible, for example, teachers feeling burnt out may be likely to perceive that their schools responded poorly to the earthquake, or perceive heightened role problems. These

directionality issues and time-sensitive findings need further exploration, utilising quantitative longitudinal research designs, in order to determine the exact nature of burnout over time in a disaster context. Nonetheless, being that this study is the first of its kind, it provides valuable insight into work outcomes within a disaster context.

A second limitation in this study concerns sample considerations, such as sample size and sampling procedures. While the sample size of 125 was adequate for detecting statistical significant correlations, power issues may have limited the identification of significant effects in the Teacher Burnout Model, namely the mediational analyses. Future research should attempt to recruit a larger number of participants. Additionally, teachers self-selected for this study from a large pool of schools, their representativeness impossible to ascertain from the anonymous survey method, which may have influenced the results. As teachers voluntarily participated by responding to a link in an email from their school principals to participate, teachers less stressed who had the time to participate, or alternatively teachers that were stressed and wanting to make a grievance, may have been more willing to participate. Therefore, it is important to interpret the study's findings with caution.

Finally, another limitation of this study regards the generalisation of findings to different post-disaster contexts. There are multiple definitions of disasters (Schmuckler, 2004); disasters occur in different forms (e.g., natural or non-natural) and with differing severities and magnitudes. These factors may influence different stress responses in individuals. In the present study, Christchurch had experienced two particularly damaging earthquakes, but had also experiencing thousands of aftershocks. As this is the first study to explore burnout correlates within a disaster context, it would be interesting for future research to explore whether the findings from this study were idiosyncratic to the Christchurch earthquake, or can be generalised out to other disaster contexts.

Further research is needed to examine the specific disaster responses from schools that teachers perceive as effective. Past research has made suggestions, such as communicating with employees to ensure their safety (Byron & Peterson, 2002; Nilakant & Walker, 2012), however, there is little empirical research regarding how schools can cope within a disaster environment to prevent teacher stress. This is important to address, as schools play a complex role in the community, and have to consider both student and staff needs within a disaster environment. Therefore, future studies could identify specific policies, practices, and supports that schools provide which are associated with positive teacher perceptions, and teacher well-being. These studies could provide valuable practical guidelines for schools operating in a post-disaster environment.

Another interesting avenue for future disaster research is to adopt a positive approach, and to investigate employee engagement within a disaster environment. Engagement is considered a positive work-related condition, in which employees experience work as stimulating, meaningful, and engrossing (Bakker & Demerouti, 2008). Accordingly, engagement is characterised by the three dimensions vigour, dedication, and absorption (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Studies reveal that engagement is differentially related to antecedents and work outcomes, compared to burnout (Maslach et al., 2001). Indeed, the JD-R model argues that, in particular, job resources lead to work engagement (Demerouti et al., 2001). While qualitative research has already highlighted the relationships between engagement and disaster exposure (Wang et al., 2011; Nilakant & Walker, 2012), to date no quantitative studies have explored engagement within a post-disaster context. Hence, future research would benefit from exploring engagement, in addition to burnout, to advance a more comprehensive and balanced view of positive and negative employee outcomes after disasters.

Implications/applications

The present study is one of the first to explore individual and organisational antecedents of burnout, along with turnover intentions, within a disaster context, and thus, has provided novel theoretical and practical implications alike. Of theoretical importance, burnout was found to be associated with disaster-variables. The scarce amount of disaster studies has revealed that disaster trauma can elicit positive or negative organisational or employee outcomes (e.g., Qin & Jiang, 2011; Byron & Peterson, 2002; Hochwarter et al., 2007; Wang et al., 2011). Within the Christchurch context, personal disaster impact, school disaster impact, and schools' ineffective disaster coping responses were shown to influence the negative outcome of burnout. While these variables were important in the etiology of burnout, the current study supports past theoretical notions that role stressors are strong predictors of burnout (Alarcon, 2011; Lee & Ashforth, 1996; Maslach et al., 2001) even within a disaster context. Furthermore, it is likely that the disaster context exacerbated role demands on teachers. The qualitative comments from the survey emphasise excessive workload as a common problem after the earthquakes, for example one teacher stated:

“Work commitments continued, assessment and portfolio samples still had to be completed even though teaching time was severely reduced. Huge additional time was put into teaching anxious children in the school”.

While this research is a preliminary study into workplace perceptions and attitudes following a disaster, it provides valuable insight for future research to build upon to gather a greater understanding of the phenomenon that is burnout.

This research also provides some valuable practical implications for schools and organisations. The findings reveal the importance of a school's role in reducing teacher burnout, not only to improve quality of life and wellbeing of their teachers, but also to reduce the associated negative impact on turnover. A recent review has shown that organisational

interventions have benefits in the reduction of employee burnout, although they are rarely implemented in practice (Awa, Plaumann & Walter, 2008). In particular Awa et al. (2008) found that organisational-level burnout interventions (i.e., aimed at restructuring work processes, to reduce job demands such as workload and conflict) integrated with person-focused interventions, were the most effective in reducing burnout in the long term. In particular, schools need to acknowledge the importance of role conflict and role overload in the development of teacher stress and burnout. While the complete elimination of role-related problems within organisations is unrealistic, it is important for organisations to keep role overload and role conflict to a minimum (Kahn et al., 1964). For example, Schwab and Iwanicki (1982a) suggest that to reduce role conflict schools need to establish clarity in lines of authority and in job descriptions, to involve teachers in goal setting, selection and evaluation procedures, and to train conflict resolution in teachers and administrators. Offering teachers time off from work, and improved and timely communications from administration, were suggested by participants as additional measures that their schools should have adopted following the earthquake, that appeal to the reduction of the role demands, namely role overload and role conflict.

This study also has implications for schools operating within a disaster context. In particular, it is important for schools to adequately respond to unexpected disasters, and to focus on meeting student and staff needs, especially to reduce the development of cynical attitudes in teachers. This is crucial as teachers who perceived that their schools did not cope effectively after the earthquakes were more likely to have intentions to quit, regardless of their stress levels. While this study explored teachers' perceptions of effectiveness of their schools' disaster response, rather than specific responses, several studies suggest organisational practices that may be helpful for employees in a disaster environment (e.g., Byron & Peterson, 2002; Nilakant & Walker, 2012). In the initial aftermath of a disaster,

organisations need to adopt practices that ensure that their employees' basic human needs are met (Nilakant & Walker, 2012). Practices include contacting employees to determine their safety and that of their family, providing food and water to employees, assuring employees that buildings are safe, and to develop evacuation procedures (Nilakant & Walker, 2012). Even after the initial crisis phase, organisations need to be aware of their employees' changing needs, and to continue to provide support and assistance to their employees (Nilakant & Walker, 2012).

Conclusion

This study was the first to examine a teacher burnout model within a post-disaster context. Findings revealed important associations with disaster-related antecedents, role-related antecedents, and burnout, operationalised as emotional exhaustion and cynicism. Significant positive correlations were found between emotional exhaustion and cynicism and the outcome of turnover intentions. Finally, emotional exhaustion was found to be a mediator in the role-related antecedents and turnover intentions relationships. In particular, results revealed that role stress and role overload played a strong role in the etiology of burnout, and through burnout were related to turnover intentions. This research emphasises the importance of reducing teachers' role-stress within schools, and for schools to provide organisational support after disasters, in order to minimise the development of burnout, and the damaging consequence of turnover. Nevertheless, future research is needed to ascertain patterns of burnout over time after a disaster, to develop specific practical guidelines for schools operating in a disaster context, and to explore burnout in addition to positive outcomes, such as engagement.

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Appendix A

Survey Items

Disaster-Related Variables:

School disaster impact (Developed for this study)

The following statements concern the impact of the 2010 and 2011 Earthquake Events on your job and work environment. Please indicate the response option that best reflects your school's situation

(1- to a very little extent – 5- to a very large extent)

1. Damage to school buildings
2. Damage to school infrastructure
3. Damage to work materials
4. Damage to, or loss of, important or sensitive school documents
5. Teaching provision was compromised

Personal disaster impact (Developed for this study)

The following statements concern the impact of the 2010 and 2011 Earthquake Events on your personal life. For each statement, please indicate the response option that best reflects your situation

The 2010 and 2011 Earthquake Events have negatively impacted...

(1- to a very little extent – 5- to a very large extent).

1. My leisure plans and activities
2. My financial health
3. My health
4. The health of one or more of my family members
5. The job security of my spouse
6. My housing situation through severe damage to or loss of property
7. My housing situation by adding occupants to my residence
8. My plans to expand the family
9. Access amenities in my residential area

School Responsiveness to the Disaster

The following statements concern your school's response to the disaster environment (2010 and 2011 Earthquake events). For each statement, please indicate the response option that best reflects the situation in your school.

(1- strongly disagree—5 – strongly agree)

1. The school has adequately met student needs in the disaster environment
2. The policies and practices in my school adequately met staff needs in the disaster environment
3. The policies and practices in my school have been revised to improve teaching provision in a disaster environment
4. The policies and practices in my school have been revised to better address staff needs in a disaster environment
5. My school had updated its resources (e.g., technology, equipment) to improve teaching quality in a disaster environment
6. The principal at my school was able to competently address staff needs in the disaster environment
7. My school has provided teachers with adequate training to cope with a disaster environment (e.g., training in emergency preparedness, and disaster-response procedures) immediately following the 2010 Earthquakes

Role-Related Variables:

Role conflict (Adapted from ‘Teacher Stress’, Pettegrew & Wolf, 1982)

The following statements concern perceptions of job characteristics in your current school. For each statement, please indicate the response option that best reflects your situation. (1- strongly disagree – 5- strongly agree)

1. I receive conflicting demands from two or more people or groups in the school setting
2. I have to ignore a rule or policy in order to carry out an assignment
3. I am given school-related duties without adequate resources and materials to carry them out
4. I have a hard time satisfying the conflicting demands of students, parents, administration and teachers
5. There is a difference between the way my administrative head thinks things should be done and the way I think they should be done

Role overload (Adapted from ‘Cross-cultural role conflict, ambiguity, and overload’ Peterson et al., 1995)

The following statements concern perceptions of job characteristics in your current school. For each statement, please indicate the response option that best reflects your situation. (1- strongly disagree – 5- strongly agree)

1. There is a need to reduce some parts of my role
2. I feel overburdened in my roles at school (e.g., teaching, administration work)
3. I feel I am given too much responsibility in school
4. My workload is too heavy
5. The amount of work that I do interferes with the quality I want to maintain

Burnout (From: Maslach Burnout Inventory (3rd ed) -Educators survey' Maslach et al., (1996)

The following statements concern your general feelings at work. For each statement, please select the response option that best reflects your current situation.

How often do you feel the following?

(1- never—7-daily)

1. I feel emotionally drained from my work (emotional exhaustion)
2. I feel used up at the end of the workday (emotional exhaustion)
3. I feel fatigued when I get up in the morning and have to face another day on the job (emotional exhaustion)
4. I feel I treat some students as if they were impersonal objects (cynicism)
5. Working with people all day is really a strain for me (emotional exhaustion)
6. I feel burned out from my work (emotional exhaustion)
7. I've become more callous toward people since I took this job (cynicism)
8. I worry this job is hardening me emotionally (cynicism)
9. I feel frustrated by my job (emotional exhaustion)
10. I feel I'm working too hard on my job (emotional exhaustion)
11. I don't really care what happens to some students (cynicism)
12. Working with people directly puts too much stress on me (emotional exhaustion)
13. I feel like I'm at the end of my rope (emotional exhaustion)
14. I feel students blame me for some of their problems (cynicism)

Turnover intentions (From: Sjöberg & Sverke, 2000)

The following statements concern your job withdrawal attitudes. For each statement, please indicate the response option that best reflects your situation. Keep in mind that your answers will remain anonymous.

(1-strongly disagree— 5-strongly agree)

1. I feel that I could leave this job
2. I am actively looking for other jobs
3. If I was completely free to choose I would leave this job

	MED 1: Emotional Exhaustion	MED 2: Cynicism	Dependent Variable: Turnover Intentions							
							MED 1: Emotional Exhaustion		MED 2: Cynicism	
			Total effect C	Direct effects c' and b path	Indirect effect a ¹ b ¹ path	CI indirect effect ^a		Indirect effect a ² b ² path	CI indirect effect ^a	
	Direct effects a ¹ path	Direct effects a ² path								
	Estimate (se)	Estimate (se)	Estimate (se)	Estimate (se)	Estimate (se)	LLCI	ULCI	Estimate (se)	LLCI	ULCI
Constant	-.952 (.480)	.399 (.573)	-.265 (.581)	.027 (.566)						
SRD	-.146 (.106)	-.222 (.127)	-.300* (.129)	-.215 (.122)	-.054 (.045)	-182	.006	-.032 (.041)	-162	.011
SDI	.074 (.083)	.186 (.099)	.069 (.100)	.015 (.095)	.027 (.034)	-.022	.124	.026 (.030)	-.008	.123
PDI	.086 (.079)	-.070 (.094)	.040 (.095)	.019 (.090)	.031 (.036)	-.016	.135	-.010 (.021)	-.084	.014
RC	.318** (.118)	.528*** (.141)	.221 (.143)	.030 (.144)	.117 (.065)	.022	.302	.075 (.069)	-.033	.243
RO	.389*** (.107)	-.185 (.128)	.009 (.129)	-.108 (.140)	.143 (.075)	.027	.328	-.026 (.032)	-.134	.009
Age	.007 (.007)	.006 (.008)	.012 (.008)	.008 (.007)						
Gender	.460* (.190)	-.210 (.228)	-.016 (.231)	-.155 (.230)						
Level	-.091 (.081)	-.085 (.097)	-.142 (.098)	-.096 (.092)						
EE (b ¹ path)				.366* (.146)						
CYN (b ² path)				.142 (.122)						
Adj R ²	.501***	.309***	.173*	.288***						

SRD= School responsiveness to disaster; SDI= School disaster impact; PDI= Personal disaster impact; RC= Role conflict; RO= Role overload; EE= Emotional exhaustion; CYN= Cynicism. ^a 95% bias corrected confidence intervals; LLCI – Lower Limit of 95% Confidence Interval; ULCI – Upper Limit of 95% Confidence Interval; 10000 bootstrap samples; *p<.05, **p<.01, ***p>.001 Listwise n=125;

